

**Before the  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554**

In the Matter of

Migratory Bird Collisions With  
Communications Towers

To: The Commission

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WT Docket 03-187

DA 04-3891

**COMMENTS OF CENTERPOINTE COMMUNICATIONS, L.L.C.  
TO AVATAR ENVIRONMENTAL, L.L.C'S REPORT**

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## Summary

Centerpointe is quite concerned with the issues related to environmental results from the construction and operation of communications towers, specifically, in how communications towers may inadvertently result in avian mortality due to migratory bird collisions. Centerpointe joins with the Commission and others in the ongoing study of this issue, including its making comments to the Avatar Report.

Centerpointe agrees with the Avatar Report in that not enough information is known and insufficient data exists for the purpose of forming any conclusions regarding the causes for avian collisions with communications towers. Further, Centerpointe agrees that there exists no record or reliable scientific evidence which demonstrates how towers might be configured or reconfigured to effectively avoid the creation of a hazard to migratory birds. In particular, the paucity of data relevant to trickle kills renders all attempts at general conclusions to be speculative, with the remaining data reported to the Commission being merely anecdotal. Accordingly, the present status of the science related to the issue is in its infancy and does not provide a basis for the adoption of policy.

Centerpointe has considered carefully the suggestions of well-meaning persons who have made recommendations to mitigate harm to migratory birds; and Centerpointe supports all efforts to discern both the causes of avian mortality and methods to avoid future collisions. However, those recommendations made to date focus on communications towers and fail to take into consideration the behavior of affected species. Nor do any of those studies demonstrate that avian collisions with communications towers is of any biological significance.

In an effort to assist the Commission in placing in perspective the issues regarding avian collisions with communications towers, Centerpointe includes data regarding the intentional killing of migratory birds by other agencies in furtherance of public policy. Additionally, to demonstrate perspective as to biological significance, Centerpointe offers specific data regarding species of neotropical migrants, the vireos. A careful review of this information demonstrates that avian collisions are not biologically significant when employing those criteria suggested by Avatar.

Centerpointe urges the Commission to accept the present status of reliable science and apply this fact to the treatment of NEPA studies for towers. Centerpointe further urges the Commission to focus future efforts moreover on methods of repelling birds from towers, rather than reconfiguring towers based on unsupported theories, as the likelihood of meaningful avoidance of future collisions by birds would be best served by this approach.

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Centerpointe Communications, L.L.C. ("Centerpointe" or "the Company") is located in Arlington, Texas and has been in the communications tower ownership and management business for many years. In its efforts to fully cooperate with all environmental policies of the FCC and other federal agencies, Centerpointe has developed an appreciation for the topic of migratory bird management as it applies to the construction and operation of communications facilities. Accordingly, Centerpointe is quite interested in the matter of environmental responsibility in the operation of radio towers and the economic/regulatory results of any articulated policy that the Commission might adopt.

**Environmental Responsibility**

The Company wishes to express its appreciation to the Commission for demonstrating an interest in the operation of radio towers and the affect of same on the environment. All persons engaged in the construction of any facility should be made aware of the potential results of operation and should be encouraged to cooperate reasonably in avoiding the creation of adverse consequences from tower placement and operation. The instant matter focuses on the potential of avian mortality from birds' collisions with radio towers, an issue which interested persons have continued to explore.

To those ends, the Commission's use of Avatar Environmental, LLC, EDM International, Inc. and Pandion Systems, Inc. (collectively referred to herein as "Avatar") for the purpose of compiling, assessing and addressing those comments received in response to its *Notice of Inquiry Regarding Effects of Communications Towers on Migratory Birds*, FCC 03-205 (August 20, 2003), is wholly laudable. Despite the best efforts of the Commission, one may well recognize that the areas explored via the NOI may not be specifically within the expertise of the Commission and that use of an outside contractor was an appropriate action taken by the Commission. Additionally, the Commission's possible inability to properly review the various studies referenced in the comments to the NOI, to determine whether the scientific data offered therein was reliable, was offset by the demonstrated expertise of Avatar. Accordingly, Centerpointe deems that the actions taken by the Commission to date for the purpose of addressing avian mortality by collision with radio towers has been entirely appropriate.

Additionally, Avatar's *Notice of Inquiry Comment Review Avian/Communication Tower Collisions* ("the Review") was prepared in a professional manner and appears to have been offered in a way which included an avoidance of undue bias, despite the sometimes competing and incomplete data offered by commenting parties. Accordingly, Centerpointe further compliments Avatar on its contribution to this proceeding and its efforts reflected within the *Review*.

Finally, the Company expresses its own concern with the safety of birds in the wild. The preservation of the ecological balance of this Country is an important issue. The benefits of maintaining bird populations are accepted as an admirable goal for a myriad of reasons, which

include everything from pest eradication via insect and vermin consumption by birds to the more aesthetic goals which may include enjoyment of the pleasant trill of a songbird. Nor can one discount the millions of persons who engage in recreational activities related to bird watching and their continued enjoyment of this activity. That a responsibility exists for all concerned individuals to be aware of the manner by which a balance between man and nature might be better maintained is nearly axiomatic.

Therefore, the comments provided herein contain and are based upon a full recognition of the responsibilities of individuals and industries to find ways, if possible, to create a harmonious, cooperative living environment which is beneficial to man, while not creating significant hazards to nature. It is unrealistic for anyone to expect that all commerce might be curtailed or halted to accommodate the mere chance that some numbers of a species might be disturbed, however, it is fully irresponsible for persons to ignore entirely the duty of taking reasoned and proven steps to participate in the preservation of nature. It is this continuum of responsibility that this proceeding addresses, while the commenting parties attempt to find a proper balance between the enormous benefits of economic development via the construction of radio towers and the extremely important duty to preserve migratory birds.

#### The Extent of the Problem

That migratory birds sometimes collide with radio towers is an established fact. Even the anecdotal information provided in the comments is sufficient to demonstrate that such occurrences are real. What is not apparent, however, by the comments or the contents of the *Review*, is the cause

of these collisions. Instead, the *Review* includes a number of unproven theories that have not been scientifically tested with any degree of reliability. This finding by Avatar is not deemed to be a conclusion in the path toward greater understanding of the issue. Instead, it is merely a statement regarding the present quality and quantity of the data which is available.

It is tempting to look at some of the empirical data contained at Table 3-1 of the *Review* and to be carried away by the numbers of birds which were killed in those reported incidents. However, the number of birds represented by all of the collisions noted on Table 3-1 and the number of towers involved in the totality of those incidents, even when combined over the reported 50-year period, are statistically insignificant. There are more than 150,000 radio towers in America, most, if not all, of which are in some migratory flyway. The entire bird population at any one time is in the tens of billions. Therefore, as dramatic as the incidents reported may appear, one would be hard pressed to state that Table 3-1, standing alone, is sufficient impetus for action. What Table 3-1 actually demonstrates is that at times significant numbers of migratory birds collide with radio towers. Since the reported incidents do not include data regarding the percentage of birds that collided with the tower versus those that continued onward during those incidents, it is quite difficult to ascertain the true effect of these incidents on a population of birds at that time for that area. Accordingly, Table 3-1 does little more than show that the underlying premise, that migratory birds are sometimes killed by collisions with radio towers, is correct; and adds to that premise that a single incident of avian collision may include mortality rates that sometimes climb into the thousands of birds over a brief period at a single location.



The second temptation is to attempt to extrapolate from the data provided in Table 3-1 to all towers operated throughout the Country. Avatar does not attempt this and in properly refraining from doing so, Avatar has shown necessary and laudable restraint. Instead, Avatar states clearly that, “[s]tudy design, study duration and incidental mortality records have varied over the last 50 years” *Review* at 3.2.1, and “[t]his variance makes it difficult to ... understand the extent of avian collisions with communications towers and whether the incremental and cumulative avian mortalities may be biologically meaningful to migratory species.” *Id.* By its recognition of the insufficient quality and quantity of data available, Avatar avoids what many environmental groups do not, the temptation to state that an avian collision at one tower will be duplicated at all towers, or that the number of collisions experienced at one location, will be duplicated for all similar structures at all locations. Additionally, Avatar also correctly notes that the reports of incidents of avian mortality, to be properly interpreted, must further be combined with reports of tower locations where little or no collision activity has taken place. Unfortunately, such reports are not available except as expressions by tower industry members who have reported in the comments that mass mortality of birds has not been witnessed around towers. Although these expressions were not gathered scientifically, the Commission’s personnel has ample experience with tower operations, including its periodic inspections of towers for the purpose of determining compliance with other regulations, to have direct knowledge that avian mortality is not constant or, perhaps, noticeable at any specific location.

The above noted, it should also not be presumed that just because the incidents of avian mortality in large numbers are not commonly noted by tower owners, that the Commission is to extrapolate the data at Table 3-1 backwards, resulting in the conclusion that bird collisions are

extremely rare and involve an insignificant number of birds. As noted by Avatar, the ability to observe the effects of bird collisions may be hampered severely by such things as scavenger or predator removal, habitat conditions, and bird crippling. *Review* at 3.2.2. And although reports of mass mortalities can be inflammatory to the study of the underlying issues, these reports are little more than anecdotal to the study of the issue as a whole. What is missing is any reliable data regarding “trickle kills,” i.e. the incremental mortality reports of low numbers of birds at tower sites. *Review* at 3.2.3. Avatar accurately notes, “the extent of ‘trickle kills’ is poorly understood.” *Id.*

In fact, this is truly the nexus of this proceeding. The Commission did not require comments to its NOI to find that birds collide with radio towers and that such collisions sometimes result in avian mortality. This fact was known. Nor is it directly relevant to the Commission’s efforts that at some times in some locations, the number of birds killed was alarmingly high. Again, this information was already known and did not require further comments or scientific analysis. What is of primary concern and relevance to this proceeding is the extent of the problem resulting from trickle kills. And, unfortunately, this is the area of which the least is known and for which the comments could not provide reliable data.

The only data regarding trickle kills appears to show that the “the number of bird mortalities at towers is reported to be decreasing while the number of towers is increasing.” *Review* at 3.2.4. One could postulate that birds are enjoying the benefits of learned behavior that includes avoidance of towers and that as the population of towers increases, the behavior is better imprinted among species of birds as each new generation adapts to a changing environment. Accordingly, the steps

necessary to protect birds from the dangers of collisions are being taken by nature itself via adaption of bird behavior. One could also surmise that the adaptation is occurring among scavengers and predators who are becoming more accustomed to hunting in areas where distressed birds might be found, i.e. under a tower following collision. Thus, the incidents of collision are not decreasing, but rather, the observable numbers of bird carcasses is being reduced by improved attention of scavengers or predators. Again, the available data deemed reliable does not allow one to conclude that either theory is correct, although Avatar points out that a recent study suggests that any decrease in mortality is more likely attributed to “weather patterns and population size, rather than more site-specific factors, such as an increase in scavengers.” *Review* at 3.2.4.

What the *Review* accurately points out is that the information available to date is simply insufficient for the purpose of determining the extent of the problem. The only reliable data provided by the comments and the studies upon which they rely demonstrates what the scientific community already knew, namely, that avian mortalities occur from collision with towers and that sometimes these collisions are part of a mass mortality of birds at given locations and times. What remains wholly unknown is whether avian mortality is experienced at all towers or the rate at which the collisions occur or the number of birds adversely affected.

#### Possible Causes

Given the accepted, scientifically demonstrated fact that collisions are occurring, the NOI and the *Review* of the comments thereto sought to address the various causes which may contribute to such collisions. That the information regarding trickle kills is so sparse underlies the murky nature

of this effort. If one does not possess sufficient information regarding incidents of trickle kills, then there exists no statistical basis upon which to examine cause beyond the anecdotal data related to the very occasional mass mortality incidents. Yet, despite this obvious lack of a statistical foundation or series of studies upon which to rest its efforts, Avatar did a yeoman's job in trying to address this area of the comments, particularly in view of the specific issues raised within the NOI. Thus, Avatar noted that "there is a consensus among the respondents that more information is need to specifically identify the associated factors and the degree that each factor contributes to avian collision risks at communication tower sites." *Review* at 3.3.1.2.

**Location:** Centerpointe believes that it is an acceptable fact that any structure placed in the path of migratory birds increases the likelihood of collisions. And although the comments and Avatar's *Review* could not quantify that likelihood to determine any conclusions, logic appears to direct one toward an inevitable conclusion, albeit one that is difficult to employ. For example, the existence of any object at a level of five feet above ground level increases the likelihood that someone may bump their head on it. In the interest of safety, one might strangely conclude that all such objects should be lowered or removed. However, arriving at such a standard would require a draconian level of regulatory myopia that is unsupportable. Thus, although dangers lurk for man and beast due to the existence of objects and structures that may, under certain circumstances, be harmful, this fact standing alone does nothing to further any effort to take reasonable steps to modify behavior generally.

**Height:** Avatar noted in its *Review* that the height of a tower may be a contributing factor in bird collisions. For the same reasons of Location, this appears to be a likely conclusion, although not proven scientifically. As the size of the obstruction is increased, there is some logical basis for believing that the increased size would create an increased risk in direct proportion to the size of the object. However, the converse may be true as a larger tower might be more easily spotted by a bird and, thus, result in earlier, successful avoidance. The information offered in the *Review* does not resolve these competing theories. In fact, a higher tower that also is masked by geographical and terrain features might pose a greater risk. *Review* at 3.3.2.1. Therefore, height alone may or may not be a contributing factor to an increased risk of bird mortality and the siting of the tower might be much more significant. Yet, again, this is only a recitation of competing theories and ideas that remain without conclusions due to the paucity of data regarding trickle kills.

**Flight Altitude:** Since the comments suggest that songbirds are affected more greatly, the *Review* further suggests that the possible reason for greater mortality rates among these species may be due to the altitude of the flights of migrating songbirds. At Figure 3-1 the *Review* shows that the relative altitude of songbirds traveling over land during the day is markedly lower compared with other species of birds shown, and that during night migration the altitude is still comparatively lower although higher than daytime flight. The logical extension of this data furthers the theory that lower flying birds are more likely to be flying at “tower level” and, thus, more likely to collide with towers. This theory is quite attractive, but does not provide a full explanation. As discussed below, other theories count as possible contributing factors darkness, visibility, and the effects from tower lighting. Yet, none of these factors would be present in what the flight altitude data would purport

to show to be the most hazardous conditions, i.e. a songbird migrating over land during the day. Were flight altitude alone significant, the incidents of collisions by songbirds during the day would be noticeable. Returning to the anecdotal information provided at Table 3-1, what an even cursory examination shows is that incidents of mass mortality usually coincide with factors which affect visibility. Therefore, birds occupying airspace that is equal in height above ground with towers does not appear significant other than to bring together the necessary components of a collision, the bird and the tower.

**Siting:** At Section 3.3.5 of the *Review*, Avatar attempts to address the issue of tower siting since some of the commenters suggested that the location of a tower might be better planned or managed to reduce the incidents of collision. And although Avatar addresses the issue, it further points out that “[n]o studies specifically examining tower siting and associated variables or comparing tower site features were found as part of the review.” *Review* at 3.3.5.2. Therefore, no record exists before the Commission to assist it in assessing this purported factor. However, turning aside from the lack of data, the issue is again problematic. Avoidance of flyways and migratory paths<sup>1</sup> would result in the inability for towers to be constructed in most of the United States<sup>2</sup>. Nor can towers be sited to avoid areas that historically exhibit conditions with storm events or frontal systems, particularly during fall and spring migration periods. Again, this would preclude a vast

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<sup>1</sup> All scientific data further shows that birds do not migrate along a specific route every year and that the flight path is altered by winds, weather, population size, and factors which are unknown to science.

<sup>2</sup> The attached Vireo Data shows that even among these species, the migratory paths of the birds covers the entire United States and most of Canada.

amount of the United States. And Avatar notes that even siting near wetlands is in question since “information is still needed to support a minimum distance.” *Review* at 3.3.5.5. Therefore, the only conclusion regarding siting must be that management is either wholly impractical or unproven to result in any positive effect.

**Darkness:** Despite the evidence noted above relative to flight altitude, the one factor which appears to increase the likelihood of collisions is night. Again, a review of the data collected at Table 3-1 shows that many mass mortalities occurred during the nighttime hours. Since the existence of radio towers cannot be limited to daytime operation like AM broadcast, there is some problem in dealing with this factor. And the ability to form policy to assist in future avoidance of nighttime collisions is made more difficult by some commenters’ suggestions regarding tower lighting. Oddly, the only flight altitude made lower by the occurrence of night alone is for songbirds traveling over water. *Review* at Figure 3-1. Accordingly, there appears to be some conflict in data evaluation when one attempts to cite night alone as a major factor in bird collisions if one simultaneously is attempting to factor flight altitude. Given the remainder of the data, it appears that night is only one form of reduction of visibility for birds that may be relevant although somewhat significant, since nocturnal migrating birds appear to be more susceptible to collision.

**Weather:** Avatar states that “inclement weather and limited visibility generally force birds to fly lower, thereby correlating increased bird mortalities at communication tower sites with inclement weather, seasonal frontal movements, and reduced visibility.” *Review* at 3.3.2.1. This statement appears to be borne out by anecdotal data at Table 3-1 and the logic which might support

this statement is compelling. Birds traveling beneath low cloud banks or seeking shelter by flying lower are traveling at a level where towers are located, hence, the two factors, the presence of the birds and the tower, are brought together. Although the *Review* does not provide data regarding whether the lower flying birds which normally fly at altitudes far above the top of towers indeed reduce flight altitude to such an extent that collision is likely or merely more likely (shorebirds may reach flight altitudes of over 4,000 feet AGL, therefore altitude would need to be reduced considerably to be deemed a factor) one can theorize that birds' reactions to inclement weather might increase the likelihood of a collision.<sup>3</sup> However, even if one accepts the theory as fact, the fact does little for the purpose of creating policy. Just as no tower can be designed in a manner to negate the effects of night, no tower can be designed to eliminate the existence of inclement weather. And if the issue is one of visibility, the Commission will bump against the issue of tower lighting as a possible factor in inviting collisions, while attempting to devise a remedy to decreased visibility.

**Lighting:** Perhaps the one factor that has attracted the most attention from persons searching for the cause of bird collisions with towers is lighting. Theories include attraction, disorientation, or the theory that birds are “trapped” by a light source. There is some small amount of anecdotal evidence that provides a scant record upon which each of these theories are based. One theory is that some combination of artificial lighting and weather result in possible loss of birds' navigational abilities. And other studies suggest that the color of light (red versus white) might be a factor.

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<sup>3</sup> Although weather appears to be a factor, Avatar points out that three species that are deemed at risk, vireos, thrushes and warblers, tend not to migrate during nights where there is precipitation, thus, these species would appear to be in less danger during times of inclement weather due to migration inactivity. *Review* at 3.3.7.2.



Avatar's *Review* illustrates this issue by noting the results of the Gauthreaux and Belser study (2000), *Review* at 3.3.6.2., which study employed a control area (no tower) a tower with red lights and a tower with white strobe lighting. The study was to determine whether birds exhibited linear or non-linear flight patterns near the differently lighted towers. If one equates non-linear flight patterns with attraction (and this is not a certainty) the results of the study suggest that birds exhibit non-linear flight patterns at a greater rate near the tower with the white strobes, and an even greater rate of non-linear flight patterns near the tower with red lighting.<sup>4</sup> Additionally, the number of birds recorded by the 23-day study over one spring and fall was greatest at the red lighted tower, than the relatively equal number at the white strobe tower and the control site. Although one is tempted to draw conclusions from this one, unpublished study in combination with other anecdotal information, the fact is "no clear conclusions can be drawn based on the existing literature, regarding the importance and effects of lighting color, duration, intensity, and type (e.g. incandescent, strobe, neon, or laser) and bird attraction." *Review* at 3.3.6.2. For example, it is unknown whether non-linear flight patterns are a result of avoidance or attraction. And what may further confuse the question is the issue of visibility. It is obvious that lighting a tower increases the visibility of the structure at night and during inclement weather. Further, that levels of visibility are likely factors in contributing to bird collisions. Yet, the accepted method of adding visibility to structures, lighting, may, under some

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<sup>4</sup> The opposite conclusion was found by the Animal Protection Institute that stated that "white light is worse than red light." [api4animals.org/481.htm](http://api4animals.org/481.htm). Also, within the *Environmental Impact Assessment Report, Application Number EAI-077/2002*, prepared by the Environment, Transport and Works Bureau of the Government of Hong Kong, relying on information gathered from 1,500 studies prepared over a 117-year period, the Report concluded that red-colored strobes were most appropriate to avoid avian mortalities, therefore, contradicting the findings of Gauthreaux and Belser.

circumstances, contribute to the risk of collision. Therefore, persons seeking to reduce one type of risk may be adding another risk factor.

As discussed above, the possible causes of bird collisions as a consideration during the construction and operation of towers has been barely explored. Despite the good intentions of scientists, environmental groups and government agencies, the reasons why some birds collide with towers, either individually or en masse, is largely unknown. Theories abound and logic draws one to consider visibility, particularly during inclement weather, as a likely cause. However, if birds lose their navigation capacity during inclement weather, it is not known whether this condition results in collision with communications towers or all obstacles, both manmade and those found in nature. One is inevitably left wanting more data to support any theory, particularly since most of the studies lumped the totality of the bird population together. As Avatar noted, there are 10,000 relevant species of birds and the photo and visual pigments for only 11 of those species is known. Thus, if there is one area where scientific study is nearly nonexistent, it is that area that focuses on the birds themselves, rather than the obstacles into which they collide.

By focusing on towers (or other structures) rather than the behavior of birds, including on a species-by-species basis, one ignores other possible theories. As shown below, birds do not only collide into towers. Rather, bird mortality is shown to have taken place due to collisions with buildings, motor vehicles, power lines, windmills, airplanes, and barbed wire fences. Given this evidence, one may theorize that birds also die from collisions with trees, rocks and cliffs. The fact is that science does not know to what extent birds are colliding with obstacles and whether such

collisions are moreover the effect of aberrant bird behavior rather than the existence of specific obstacles to flight. One need only consider the incidents of whale beaching and other life-threatening behavior by animals to at least consider, for the sake of intellectual honesty, the possibility that the root cause of bird collisions is that such activity occurs in nature, without regard to the presence of a manmade structure and that man's contribution is moreover the construction of additional, obvious obstacles, adding to the obstacles that already exist in nature and that may also be the sites of unrecorded avian collisions.<sup>5</sup>

What the *Review* repeatedly points out is that additional study is required to provide even a modicum of facts upon which future policy might rest. At this juncture, there is very little known about this phenomenon and the science is at its infancy. It is this status which casts grave doubts on efforts to adopt guidelines to produce a remedy to bird collisions with radio towers and nothing within the *Review* would support adoption of any such guidelines. For example, Avatar reports “no specific details were provided on how the[se] specific recommendations [the USFWS’ tower siting guidelines] were developed.” *Review* at 3.3.9.3. And though one might sympathize with those organizations that feel compelled to *do something*, frustration without understanding is an inappropriate motivator for rational action.

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<sup>5</sup> The American Wind Energy Association found within its *Facts About Wind Energy and Birds* that “Birds collide with numerous other obstacles, both natural and of human manufacture...” and “Raptors in pursuit of prey have crashed into buildings and natural obstructions such as trees.” [awea.org](http://awea.org) (emphasis added) One species of bird, capercaillies, were found to collide with deer fences (*Source*, BBC News, April 20, 2000).

Despite the paucity of data collected and with an understandable desire to take action, some of the commenters have suggested certain guidelines be implemented for future siting of towers. These suggestions include<sup>6</sup>: (1) reduction in the number of new tower builds by reliance upon existing structures, however, this would be presumed effective only in rural areas where an increase in flight obstacles would be significant, yet rural areas often lack alternative existing structures; (2) construction of towers, when possible, at less than 199 feet AGL to avoid lighting requirements, yet smaller towers reduce the potential of collocation, thus creating a need for more structures; (3) construction of more unguyed towers to reduce any threat from guy wires, however, unguyed towers may not be possible due to the condition of soil and self-supporting structures normally cannot accommodate as much collocation due to wind load limitations; (4) encourage installation at “antenna farms,” but antenna farms do not lend themselves to a cellular network configuration; (5) locate towers away from areas of high migratory bird traffic, however, as shown on the attached Vireo Data, all areas of the United States exhibit high traffic levels from some species; (6) use the minimum amount of lighting required by the FCC, which is easily doable but does not promote air traffic safety; (7) minimize the tower “footprint,” which is contrary to the idea of encouraging self-supporting towers which often require a larger footprint; (8) dismantle inactive towers, again a doable task presuming one comes up with a workable definition of “inactive” that does not result in an improper taking of property; (9) use visual markers, which may be entirely appropriate presuming that further study finds that these markers are, indeed, effective; (10) minimize security lighting and point all such lighting downwards, yet, such lighting serves functions related to the non-creation of

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<sup>6</sup> These recommendations are contained in the comments of the American Bird Conservancy (Shire, Brown and Winegrad 2000) and are in response to that anecdotal data presented at Table 3-1 to the *Review*.

an attractive nuisance and minimizing that lighting might expose tower owners to unwanted liability; (11) allow access to tower sites for monitoring purposes, however, again tower owners would require some assurances against acceptance of liability from persons who are performing that monitoring; and (12) conform lighting to reduce attraction of birds once data is sufficiently collected which demonstrates whether white or red or strobe or whatever kind of lighting is least likely to attract birds, however, any such action must further conform to the tower owner's duty to abide by air traffic safety guidelines. Therefore, as is demonstrated by the foregoing, the creation of mandates on tower construction is not simple, is often contradictory, and is fully dependent on additional information being gathered.

Based on the foregoing, Centerpointe reiterates its belief that further studies should focus on the birds and, thus, what steps might be taken to alert or repel birds to and from tower structures. Since avian collisions appear to occur even when no evidence of attraction occurs, the logical reaction should be to devise methods to repel birds, particularly those methods which would be effective to repel birds in migratory flight, taking into account distance, speed, and altitude. The literature, to date, shows that little has been done to study whether effective means might be available, particularly when compared to the amount of literature suggesting often impractical reconfiguration of towers or tower siting. What is apparent, however, is the key to resolution of the issue is not mandated changes in tower construction to reduce, theoretically, by some small, unproven degree the attractiveness of towers to birds; but to devise a method which alerts birds to danger and causes them to alter flight to avoid collision.

### Significance

Perhaps the most difficult issue addressed within the *Avatar Review* at Section 3.5 is the issue of significance, i.e. whether the level of bird mortalities caused by collisions with radio towers is biologically significant and, thus, entitled to government action. The continuum of environmental responsibility is probably most evident within the context of this discussion. The USFWS and environmental groups state that the level of bird mortality is significant, while PCIA, NAB and CTIA question whether bird collisions with towers are, indeed, significant. The pro-significant commenters state that their estimates of the number of bird mortalities demonstrate significance and USFWS even goes so far as to point to the death of a single Kirtland warbler<sup>7</sup> as being significant since the species is endangered, *Review* at 3.5.2.

The problem of ascribing significance to a bird kill based on the bird's species and the species' total population (i.e. managed or endangered or abundant) is that it does nothing to further the core discussion. Since no science is available that shows what may be done to eliminate the threat of collision by any one species, the issue regarding specific species is nearly moot. This is particularly true since managed or endangered species employ the same flyways as all other birds over a tremendously large amount of territory. Despite the obvious nature of this circumstance, some

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<sup>7</sup> What the USFWS did not reveal is that the population of the Kirtland warbler is dependent on the availability of young Jack pine trees (5-16 feet tall) and that forest management to provide this habitat has caused the population of Kirtland warblers to increase by five times their previous low. Thus, the biological significance of a single warbler is entirely negligible when compared to the rapidly increasing population of the species. The *Review's* reference to the Lapland Longspur (*Review* at 3.3 and 3.5.2) also neglects to note that this species is quite common according to the U.S. National Park Service, therefore, although an incident of mass mortality in the thousands may have occurred in the past, this incident is not biologically significant when viewed against the population of the species.

commenters, including the USFWS, have attempted to point to specific species as particularly vulnerable to tower collision. To reply to such comments necessitates an examination of those species to determine what effect tower collision is deemed to have as compared to any other existing threat to the species population and repopulation. Accordingly, attached hereto is a study of vireos, a neotropical migratory bird that is mentioned repeatedly in the *Review*, see, *Review* at 3.3, 3.3.2.1, 3.7.7.2 and 3.5.2. The information gathered and presented therein shows clearly that vireos' collisions with towers is among the lowest priorities in sustaining vireo population numbers. This vireo study demonstrates that adoption of guidelines that focus on a single species or group of species is entire impractical. In fact, the science is so bare that one might risk taking steps to avoid collisions by one endangered species, which steps place another endangered species at greater risk. The fact is, no one knows.

The *Review* attempts to reach a method of determining significance by noting the two possible factors in determining significance, “ ‘context’ (i.e. importance) and ‘intensity’ (i.e. magnitude) of the action.” *Review* at 3.5.3. Stated simply, whether the action is sufficiently important or of great enough magnitude to be deemed significant. In fact, this is where opposing commenters diverge greatly. The environmental groups and the USFWS lean on the issue of importance stating, in effect, that the mortality of birds arising out of tower collisions is important enough to merit policy. Opposing commenters state that the magnitude of the problem is too small to warrant adoption of policy. However, to their combined credit, nearly all commenters support further study to determine both context and intensity.

**Context:** The issue of whether avian mortality arising from collision with towers is important begs some perspective. The, perhaps, natural tendency is toward sympathy with the plight of dying birds. We have been conditioned to take notice and care about our environment and this conditioning is laudable. However, for one to consider the issue from the perspective of policy initiatives, the term “important” takes on additional meaning. It now connotes priorities, costs, levels of resources, economic ramifications, and a host of other elements which must be considered in any rational discussion. And if one is discussing the issue in the context of government actions, one may fairly assess the level of importance that government normally grants to the death of animals in the wild, in particular, birds. When viewed in this manner, the picture becomes quite muddled. On one hand, USFWS has stated in its comments that the subject avian deaths are important, yet, another agency of the federal government actually engages in the intentional killing of animals and the USFWS encourages the hunting of migratory birds.

In Fiscal Year 2003, the USDA Wildlife Services intentionally killed 1,684,064 animals in furtherance of its mission to “provide the Nation with safe and affordable food.” Home Page of the Animal and Plant Health Inspection Service (APHIS). Among the list of animals intentionally destroyed are over 40,000 blackbirds, nearly 7,000 cowbirds, nearly 3,000 crows, over 6,000 mourning doves, nearly 3,000 egrets, over 10,000 geese, over 50,000 grackles, around 20,000 gulls, 2,000 mallards, 1,000 meadowlarks, 60,000 pigeons, 8,000 sparrows, and over 1,000,000 starlings. (the entire list is available at [aphis.usda.gov/ws/tables/03table10t.pdf](http://aphis.usda.gov/ws/tables/03table10t.pdf)). Based on the USDA data, the one type of animal which is deemed fully expendable is a bird. Well over 60% of the animals intentionally killed by the USDA are birds and the total number of birds intentionally destroyed by



the USDA in Fiscal Year 2003 exceeds the total of all bird counts shown at Table 3-1 of the *Review* which includes all “Significant Bird Mortality Events Over Last 50 Years.” Stated simply, the USDA intentionally killed more birds in one year than the total number of avian kills by tower collision deemed significant over the last 50 years.

The USDA is not alone in having to perform this unfortunate task. Bird strikes at airports are a serious safety risk. To reduce this risk, airport officials have often looked to destroy birds that might pose a hazard. The JFK airport reported the destruction of over 55,000 gulls to better protect airline passengers. And although many entities and agencies have attempted to use pyrotechnics and other loud noises to scare birds away, the literature in this area notes that the birds can become accustomed to loud noises and, thus, the only consistently effective means of controlling the situation is the intentional destruction of birds at or near airports, usually involving gunshot or poison.

It would also be prudent to cast a look at the USFWS’ statistics regarding the harvesting of migratory birds by the encouragement of sport hunting. The USFWS reports that during the 2003-04 hunting season, its management of migratory bird populations via the encouragement of sport hunting, including expanding hunting on national refuge lands, resulted in the deaths of 13.4 million ducks, 3.8 million geese, 35,000 sand hill cranes, and 300,000 woodcocks.<sup>8</sup> Accordingly, the USFWS has encouraged or overseen the intentional killing of approximately 18 million migratory birds throughout the United States for a one-year period. Despite the proficiency of United States

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<sup>8</sup> The USFWS also permits the hunting of other migratory fowl (e.g. swans) but data on numbers of kills was not available for these comments.

hunters as encouraged by the USFWS, the USFWS' report entitled, *Migratory Bird Mortality* (January 2002), does not list hunting as one of its "human-caused threats [that] afflict our bird populations." The Report does cite communications towers as a threat, but concludes that additional research is required and until such research is done, "we cannot . . . recommend against building new structures . . . [because] the cumulative impacts of collisions on bird populations. . . are currently unknown." Thus, the USFWS and the Commission's record appear to point to the same conclusion.

Centerpointe does not suggest that the USDA's actions which involve destroying birds (usually by gunshot or poison) is inappropriate. The job performed by APHIS is vitally important to the health, safety and economy of the United States as are actions taken by persons seeking to protect airline passengers from the effects of bird strikes. That animals must perish to accomplish these tasks will be deemed unfortunate by nearly everyone. However, what this information provides is some perspective as to the issue presented in this proceeding. The Commission has long deemed that the public interest, including the deployment of public safety radio systems and mobile telephony/data, is of vital interest to the United States and its citizenry. That radio towers need to be constructed and operated to further the objective of providing necessary services is obvious. The question is, therefore, what is the effect of taking into consideration the necessary communications services provided by towers, particularly in view of the fact that bird kills are wholly unintentional, largely not understood, and appear to be an unfortunate byproduct of this activity? The federal government has found adequate justification for the intentional killing of dozens of species of birds

to further the greater good.<sup>9</sup> The issue before the Commission is whether the unintentional outcome of greater public safety resources and economic development warrants restrictive policies. Or stated another way, are the incidents of bird collisions sufficiently important to be deemed significant for the purpose of creating policy in view of the public interest in tower construction that contributes to public safety? The data and the United States Government's actions in other areas suggests a negative conclusion.

**Intensity:** As noted above, intensity or magnitude is in doubt. Although estimates of avian mortality from collision with radio towers usually range from 1-4 million birds annually, again these estimates must be put in perspective to be useful. As other commenters have noted, avian mortality due to cats, estimated in the 40-60 million range<sup>10</sup>; collisions with buildings, estimated at over 100 million<sup>11</sup>; utility lines, estimated at 130-174 million<sup>12</sup>; vehicular collisions, estimated at 60-80 million<sup>13</sup>; sport hunting, estimated at nearly 20 million; and barbed wire fences, estimates not yet made; shed some light on calculating the intensity associated with the problem. Although Table 3-1 of the *Review* and the reported mortality rate of birds appears, at first, striking, the numbers lose their

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<sup>9</sup> Recreational activity for 1.5 million waterfowl hunters is deemed sufficient justification for the harvesting of tens of millions of ducks and geese alone (*Source*, Ducks Unlimited)

<sup>10</sup> Animal Protection Institute

<sup>11</sup> *Id.*

<sup>12</sup> American Wind Energy Association

<sup>13</sup> *Id.*

impact when compared to the APHIS totals or the “harvest” figures, i.e. numbers killed by hunters<sup>14</sup>, published by the USFWS or following one’s reading of “*Aerodrome Bird Hazard Prevention: Case Study At John F. Kennedy International Airport*” (November 12, 2001).

Intensity or magnitude is necessarily comparative to the universe of similar occurrences. Something is greater or lesser than another thing of equal relevance, i.e. intensity. Accordingly, intensity as a factor of significance requires the Commission to view avian mortality due to collision with communications towers as compared to the universe of other causes of avian mortality. There is little doubt that as compared with utility lines, buildings and motor vehicles, collisions with communications towers is simply not intense. Nor is it intense when compared to the tens of millions of birds killed annually by cats and sport hunters. In fact, the available data shows that as among dangers to birds caused by the construction and operation of manmade structures, no finding of intensity is appropriate as applied to communications towers.<sup>15</sup>

As articulated above, the issue of significance sufficient to justify any immediate or contemplated action should be met with a rational approach. As Avatar stated, the presence of context and intensity must be shown to exist sufficiently to direct a responsive action. The record

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<sup>14</sup> The January 6, 2005 edition of the *Kansas City Star* reported that 5,000 snow geese and 400 Canada Geese had been harvested at a single location, Fountain Grove, Missouri, during the hunting season.

<sup>15</sup> Even when applied to a single species, the vireo, the presence of radio towers is rarely mentioned as a threat to the species and, instead, vireo studies point to the intrusion of the brown-headed cowbird as a far greater threat. See, attached Vireo Data.

at this time does not support a finding of significance for the purpose of adopting policy. To the contrary, the record suggests a fully contrary conclusion.

#### Recommendations For Future Action

Although the record of this matter supports a suspension of substantial effort toward attempting to devise any policy statement, we do not believe that this is the best course. The paucity of data obviously requires that no mandate be created, since neither the Commission nor any commenting party can show with any degree of certainty that any steps initiated would be effective. Indeed, mandated actions may be found to be ultimately harmful to migratory birds, since there is little or no data upon which to base any conclusion other than the obvious conclusion, that too little is known.

It is apparent that any proposed rule making or attempt to adopt even a voluntary policy is premature. And whatever steps might be taken following continued study must be balanced against the Commission's obligations to take steps that will not endanger air safety. Finally, although some of the commenting parties appear to give little weight to concerns which local communities might have, suggestions that impact aesthetics, vistas, SHPO, and the like must be considered in the context of any future recommendations. For example, if the agency were to mandate that all towers over 100 feet AGL must include the use of white strobes to discourage avian collisions, the Commission must concurrently consider that implementation of such a mandate would result in a hue and cry across numerous communities and state agencies.

Additionally, the Commission must resist the temptation to *do something* that results in premature adoption of policy or rules. A placebo of feigned progress will do nothing to protect migratory birds. Although Avatar lists some devices (mainly guy wire marking devices) that are intended to increase visibility for birds, there is little if any evidence that any of these devices are effective when placed on guy wires, despite some questionably favorable reports regarding use on utility lines. And since most collisions occur at night, those devices which only increase daytime visibility are of even more questionable value. Accordingly, at this time there is no known, effective means for tower owners to engage in avian mortality avoidance.

Despite the paucity of reliable data, the Commission should not simply ignore the issue. The agency can continue collecting data from the variety of sources that are already generating same. It can continue its encouragement and participation in Communication Tower Working Group. The Commission may even finance its own study to assist it in developing information about collision avoidance methodologies. Specifically, the Commission should encourage greater study into methods of repelling birds from tower locations. Over time there is every reasonable expectation that scientifically reliable information will be developed that will provide vital illumination to this issue and may even map a course of effective management of tower operations to assist in maintaining bird populations. Until such time as these laudable goals might be reached, the Commission must exercise restraint and patience, and that may be the most difficult, but useful, task of all.

In the meantime, Centerpointe strongly urges the Commission to not find that any structure is in violation of NEPA guidelines based on any supposition regarding threat to migratory birds. Nor should the Commission find that any environmental impact study on file is in anyway deficient in this regard. Based on the comments received and the *Avatar Review*, the Commission has become quite aware of the fact that no tower owner is in a position to assess adequately the effect that construction or operation of a tower might have on future avian collisions. If there is any certainty to be gleaned from this proceeding, it is that no one is able to predict the effect on the avian population from the existence of a specific tower; and no one is presently able to offer any action which might immediately mitigate harm to migratory birds from a specific tower. Accordingly, Centerpointe suggests that the Commission adopt the published position of the USFWS which states, “we cannot . . . recommend against building new structures . . . [because] the cumulative impacts of collisions on bird populations. . . are currently unknown.” *Migratory Bird Mortality* (January 2002), published by USFWS.

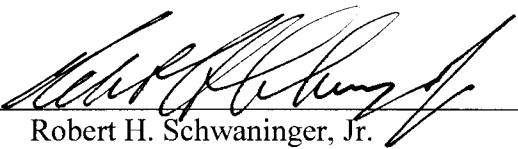
The fact is that despite the good intentions of the Commission and the USFWS and the parties commenting within this proceeding, any analysis of an existing or proposed communications structure for the purpose of demonstrating compliance with Section 7 of the Endangered Species Acts of 1973, 16 U.S.C. § 1536(a)(2), is wholly speculative at this time. As Avatar pointed out again and again within its *Review*, we simply do not know why or at what level avian collisions occur and what, if any, steps can be taken to reduce the number of collisions. And although tower owners have and will continue to attempt to fulfill their obligations under NEPA and the Commission’s rules, the bases upon which one might judge those efforts is insufficient for reasoned decision making.

Finally, Centerpointe again wishes to compliment both the Commission and Avatar in the combined efforts to illuminate this area of scientific study. Centerpointe also commends the Communication Tower Working Group and all participants in those efforts that seek to balance the needs of the environment with the needs of man to increase the availability of emerging technologies and the effectiveness of public safety through telecommunications.

Respectfully submitted,

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## Vireo Data

### **Introduction:**

The vireo is often cited in the *Avatar Review* (see, *Review* at 3.3, 3.3.2.1, 3.3.7.2 and 3.5.2) as one of the bird species which is most vulnerable to collision with communications towers. Although the basis of the data which produced this finding is somewhat in doubt, anecdotal, and without any statistical foundation regarding trickle kills, nonetheless, in reply to this claim a prudent examination of the species is necessary to determine what, if any, threat to the species can be found or quantified, and whether there exists any biological significance to the incidences of vireos' collisions with communications structures. Accordingly, in an effort to determine the context and intensity of the circumstance, the following information was gathered.

Vireo is defined by the Encyclopedia Britannica Online as "any of 42 species of New World birds constituting the family *vireonidae* (order *passeriformes*).” Among the 42 species, about 13 of the species migrate from Central and South America to North America for the purpose of breeding. Breeding areas vary from the southern United States to Canada, and vireos can be found in most states at one time or another, either as a breeding location or as the species travels through on its way to or from a northern breeding location.

Vireos are small songbirds (smaller than a sparrow) that feed on insects. They feed on caterpillars, beetles, stinkbugs, bees, spiders, etc. and some are known to eat small fruit, such as berries. Their flight pattern is generally described as low, slow and sluggish, as they will go from tree to branch seeking insects upon which to feed. Nest predators include snakes, lizards, racoons, skunks, chipmunks, mice, opossums, other birds, and ants. Vireo nests are often the target of cowbirds, which will deposit their eggs in the nests of other birds. The cowbird's offspring hatch before the vireo's and will command most of the feeding, causing the vireo young to be abandoned and die. For additional information, see, *The Vireo Home Page*, [eebweb.arizona.edu/faculty/hopp/vireo.html](http://eebweb.arizona.edu/faculty/hopp/vireo.html).

To appreciate the status of species of vireo whose migration includes the United States, a thorough search of available data was performed, to determine the current kinds of threats which each species was facing and the nature of that threat. Attention was paid to experts' comments regarding whether the species was in decline, stable or was increasing. These comments were deemed important to determining whether the increased presence of communications towers might be having an effect on the species'

ability to repopulate or if any, more biologically significant, event were occurring that might result in a threat to any species' population. The species are treated in alphabetical order.

**Bell's Vireo (*vireo belli*):** Migration pattern takes the Bell's vireo as far north as Wisconsin and farther north. The management considerations include, land use patterns, particularly along riparian habitats. Experts note that the modification of natural habitat due to agriculture, urbanization, grazing, flood control projects, and reservoir construction have reduced habitat for this species. Large water releases from dams and reservoirs can flood low lying areas where Bell's vireos nest. This species depends on low, dense, shrubbery for nesting and increased land management is believed to be required to assist in maintaining populations. Additionally, since Bell's vireos feed on insects, uses of pesticides are highly dangerous to these birds. (Source, *Wisconsin Department of Natural Resources*).

**Black-capped Vireo (*vireo atricapillus*):** The Black-capped vireo nests in Texas and a small portion of Oklahoma during April through July. Their nests are situated 2 to 4 feet above ground, normally in the crook of a shin oak or sumac. The Black-capped vireo are endangered due to clearing of low growing, woody cover they need for nesting, which cover has also been reduced due to overgrazing by livestock and deer. Additionally, the control of range fires, which used to keep the land open and the shrubs close to the ground, has reduced the number of suitable nesting sites and has made the Black-capped vireo nests more accessible to cowbirds. Management considerations have included greater deer harvests, rotational grazing, and reduction in numbers of cowbirds. (Sources, *Audubon Watchlist* and *Texas Parks and Wildlife*).

**Black-whiskered Vireo (*vireo altiloquus*):** Although sometimes spotted along the Gulf Coast, the only breeding ground within the United States is in Florida. Black-whiskered vireos prefer red mangrove swamps and tropical hardwood forests for nesting, which nests are typically located 5-8 feet above ground. They arrive in March and depart in September. The breeding ground of the Black-whiskered vireo is mainly in protected areas (e.g. Everglades National Park) and thus, they have not suffered from human disturbance. In fact, some evidence shows that the number of breeding grounds may be increasing. The greatest threat cited to their continued repopulation was brood parasitism by cowbirds. (Source, *Florida's Breeding Bird Atlas*).

**Blue-headed Vireo (*vireo solitarius wilson*):** The Blue-headed vireo is found in most of Southern Canada and along the Atlantic Coast for nesting, while it winters along the Gulf Coast and into Central America. Unlike the Black-capped vireo, the Blue-headed vireo is described as “common” and “an abundant breeding bird species.” Management considerations are tied to the bird’s nesting habits which include substantial use of Eastern hemlock trees for building nests. These trees are currently threatened due to a widespread infestation of the insect, Hemlock Wooly Adelgid. Nonetheless, the Blue-headed vireo has been found to be the 6<sup>th</sup> most common breeding bird in the Great Smoky Mountains National Park which coincides with other evidence that shows that this bird prefers breeding grounds that are between 4-5,000 AMSL. Again, experts point to cowbird problems in repopulation of the Blue-headed vireo. (Source, *Discover Life America, All Taxa Biodiversity Inventory*)

**Cassin’s Vireo (*vireo cassinii*):** The Cassin’s vireo’s breeding ground reaches into Canada in British Columbia and Alberta, and includes the United States’ Northwestern Coastal regions extending east into Idaho. Its nesting is somewhat higher above ground, 6-15 feet, than many other vireos and this difference may partially explain why the Cassin’s vireo population appears to be steadily increasing. It prefers nesting in the mature forests of the Northwest, including in conifers and other trees. Like all vireos, brown-headed cowbirds frequent the nests of Cassin’s vireos. (Source, *Cornell University’s, Birds in Forested Landscapes, Cornell Lab of Ornithology*).

**Gray Vireo (*vireo vicinior*):** The Gray vireo nests in the Western United States, mainly in Colorado, Utah, New Mexico and Arizona. The Gray vireo chooses the hottest, driest areas for breeding, favoring thorn scrub, juniper and oak-juniper scrub as nesting spots, with pinyon-juniper woodlands being the most common location for nesting. The primary threat to Gray vireo is the clearing of pinyon-juniper woodlands which has occurred substantially in California and Arizona. Despite the reduction in habitat, there are indications that the Gray vireo’s population is increasing, however, the concurrent increase in population of cowbirds which coincides with an increase in grazing land via clearing, is a threat to the Gray vireo. Its reaction to brood parasitism by cowbirds is often to abandon its nest, thus leaving its young to die or simply failing to reproduce at regular intervals. (Source, *Audubon Watchlist*).

**Hutton's Vireo (*vireo huttoni*):** The Hutton's vireo has a nesting region which is similar to the Cassin's vireo and the location of its nests is similar, i.e. higher than most vireo in that it is located some 7 to 25 feet above the ground. Like the Cassin's vireo, this may explain in part why this vireo is deemed "common," as the higher nest location, usually in live oak trees, may prevent some ground dwelling predators from reaching the nest. Like many vireos, the Hutton's vireo engages in hawking insects for food. (Source, *United States Geological Survey, Northern Prairie Wildlife Research Center*).

**Least Bell's Vireo (*vireo bellii pusillus*):** This endangered species of vireo nests in Southern California along waterways. Its insect-eating habits often include hovering next to a branch while plucking the insect off, or hawking insects, i.e. eating them midair. The nests of Least Bell's vireos are the lowest of the vireo nests, usually located only about 3 feet above ground, preferring dense shrubs for nesting. Management concerns include land development, water diversion, recreational activities that create human disturbance, and excessive grazing. The nesting areas are becoming increasingly marginal, thus increasing the level of brood parasitic behavior. Where cowbirds' populations have been reduced by trapping, shooting and removal (under the control of the USFWS), the Least Bell's vireo population has increased. (Source, *California Department of Fish & Game*).

**Philadelphia Vireo (*vireo philadelphicus*):** This vireo nests over a large area of Canada and the Northern United States, with its nest located relatively high in trees at 10-40 foot levels. As Philadelphia vireos depend on the woodlands of the northern climes, its population is holding steady and it is not deemed to be threatened. In fact, a University of Maine study suggests that the number of Philadelphia vireos in that state is rapidly increasing, since these birds appear to prefer young forests and some past cutting in Maine has actually encouraged an increase in Philadelphia vireo breeding. (Source, *Chipper Woods Bird Observatory and University of Maine, Maine Gap Analysis, Birds*).

**Plumbeous Vireo (*vireo plumbeus*):** This vireo breeds in areas of the mountainous Western United States. It prefer conifers and oaks, therefore, it is among the higher nesting of the vireos. Its farthest north nesting location is believed to be South Dakota. The population of the Plumbeous vireo has been found to be stable over recent surveys, however, greater incidents of brood parasitic behavior by brown-headed cowbirds pose some threat. (Sources, *South Dakota Birds* and *USGS*)

**Red-eyed Vireo (*vireo olivaceus linnaeus*):** The Red-eyed vireo is one of the most abundant breeding birds in North America (east of the Rockies), but its breeding area extends to Canada. It winters in South America, so its migration distance is considerable. In some areas it has been surveyed to be the 2<sup>nd</sup> most abundant species of breeding bird. The bird is deemed fairly common over its entire breeding area, although there are some suggestions that the overall population might be in decline in some specific areas. Again, the brown-headed cowbird and its increasing population is the threat most commonly associated with Red-eyed vireos. (Source, *Discover Life America, All Taxa Biodiversity Inventory*).

**Warbling Vireo (*vireo gilvus*):** Although the Warbling vireo is deemed to be a fairly common breeding bird, experts have noted that the total population may be in decline due to the increased use of pesticides on shade trees. However, despite this concern which is common with all species of vireo, one may note that the Warbling Vireo's range is the most extensive of all of the vireos, extending over much of the United States and as far north as the Yukon. Some areas have reported increased population, excepting California, likely due to land development. (Source, *enature.com* and *University of Cornell, Cornell Lab of Ornithology*)

**White-eyed vireo (*vireo griseus*):** The White-eyed vireo nests throughout the Eastern United States as far north as Massachusetts, but winters in the Southern United States, Central America and the Caribbean. The population of this species appears stable, however, is affected by the availability of suitable nesting sites which can be reduced by clearing. Further population declines have been noted when hard freezes have occurred in the Southern United States during typical winter months. The White-eyed vireo does not appear to be especially threatened in its breeding areas, particularly those which are increased by the cutting of timber, followed by the emergence of young trees with substantial undergrowth undisturbed by grazing – a condition which exists in much of the Carolinas. (Source, *North Carolina Wesleyan College, Wildlife Profile*).

**Yellow-Throated Vireo (*vireo flavifrons*):** Another breeder throughout the Eastern United States, the Yellow-throated vireo's population does not appear to be threatened except in areas where substantial clearing of forests or where there has been extensive uses of pesticides on shade trees. Despite these challenges, there exists indications that the total

population of the Yellow-throated vireo is increasing. With this said, experts further question whether this trend will continue as populations also appear to be adversely affected by tropical deforestation that decreases winter habitats. (Source, *North Carolina Wesleyan College, Wildlife Profile*).

#### **Review Of Data Relevant To Communications Towers:**

The above data describes the various species of vireos that migrate into the United States for the purpose of breeding. A review of hundreds of descriptions of these birds and associated efforts toward conservancy only cites the existence of communications towers and bird collisions on rare occasions. The most common causes of any noted decrease of population for any species, among those that showed that population was decreasing, were as follows:

- \* Loss of habitat due to forestry or clearing of land
- \* Increased grazing of livestock or deer, eliminating habitat and increasing numbers of brown-headed cowbirds
- \* Predators
- \* Pesticides
- \* Brood parasitic behavior by cowbirds
- \* Hard winter freezes in southern habitats

In fact, the most common threats cited were clearing, pesticides, and cowbirds. Despite the threats to these various migrating species, many species were found to be increasing in population. The one, truly threatened species, the Least Bell's vireo, was found to have increased its population by the government's reduction in the number of cowbirds that might invade the vireo's nests. The other endangered species, the Black-capped vireo, is suffering from a loss of habitat due to increased clearing and grazing, combined with greater intrusion from cowbirds.

The fact is that vireos are suffering from a double threat, clearing and cowbirds. As clearing of timber and range land has gone unchecked in many areas, the population of cowbirds has increased. Originally found in the Great Plains, cowbirds now occupy all of North America, encouraged to increase their range due to clearing. The female cowbird not only deposits its eggs in the nest of the host vireo, but she often kicks out the vireo

eggs or eats them, leaving a single host egg to encourage the vireo to continue to raise the young, including the cowbird young. Why cowbirds are particularly fond of vireo nests is unknown, but the myriad of studies regarding vireos is quite clear that cowbirds continue to be one of the greatest threats to the vireo population. (Source, *Cornell Lab of Ornithology*).

Accordingly, any consideration of the biological significance of avian collisions with communications towers as same effects the population of vireos (or other affected birds) must include a survey of that species and the management concerns that are articulated in all related studies and literature. To ignore all other sources of kills or an inability to repopulate is to fail to understand the relevance of the collisions to that species' population. Based on this review, there is little, if any, evidence to show that vireos are at any significant risk from collision with communications towers. And that other risks that are posed to the continued existence of any neotropical migrating vireo so far exceed any threat from collision with communications towers as to make that threat wholly negligible.

What this data shows most clearly is that claims regarding the effect of avian collisions with communications towers must be placed in logical perspective. The Commission should not entirely ignore or discount the fact that vireos may collide with communications towers, however, logic requires that such incidents be placed in proper perspective among all threats to a given species, particularly when the population of a given species is found to be increasing overall.

Perhaps the most telling data collected regarding neotropical migratory vireos that nest within the United States is the data regarding the most endangered species, the Least Bell's vireo. During a period of increased construction of communications towers, the population of the Least Bell's vireo increased because of a program to limit the effects on cowbirds. As the population of cowbirds was caused to be decreased by trapping and shooting, the population of Least Bell's vireo increased, despite the increased number of towers being built. This data, among the entirety of data regarding the other species of vireos, points to an obvious conclusion, that the future of vireo populations is not dependent on the height, siting, or lighting of communications towers, but rather, on the relative population of cowbirds – a biologically significant factor that is well documented.